

U.S. Patent Application Serial No. **10/808,446**
Response filed November 20, 2006
Reply to OA dated July 20, 2006

REMARKS

Claims 4, 5, and 7-9 are presented for examination. Claim 4 has been amended in order to more particularly point out and distinctly claim the subject matter to which the applicants regard as their invention. Amended claim 4 is based on p. 2, lines 15-17, and Examples 4-6 of the specification:

Lamination was conducted by applying hot melt-type polyurethane having water vapor permeability as the adhesive to the skin layer of the asymmetric porous PTFE membrane, adhering the blend fabric thereon and curing the polyurethane adhesive.

The applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **July 20, 2006**.

Claims 4, 5, and 7-9 define an air permeable and waterproof membrane for clothing comprising an asymmetric porous polytetrafluoroethylene (PTFE) membrane having two layers, a dense skin layer and a porous layer. In particular, by design, the *air permeable* PTFE membrane cannot comprise an adhesive layer since that would compromise the air permeability of the membrane.

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Claims 4-5 and 7-9 are rejected under 35 USC 103(a) as being unpatentable over Reaney (U.S. Patent No. 5,162,149) in view of newly cited Pelland, et al., (U.S. Patent No. 6,471,803).

Reaney discloses an asymmetric porous PTFE membrane wherein a PTFE membrane comprises a porous layer and a dense skin layer. **Pelland** is cited for the disclosure of applying a woven nylon fabric backing to a seam tape.

Reaney and **Pelland**, in combination, fail to teach or suggest the present invention recited in claims 4, 5, and 7-9 because **Reaney**, by design, teaches away from laminating fabric directly on the dense skin layer, and specifies a porous layer having an adhesive layer.

Unlike **Reaney** which is directed toward a non-blocking seam tape, the claimed invention defines an air permeable and waterproof fabric. The differences in the two objectives result in patentably distinct inventions. Specifically, the structure of the claimed air permeable and waterproof membrane for clothing is patentably distinct from that of the seam tape disclosed in **Reaney**, which comprises a layer of expanded porous PTFE and a layer of thermoplastic hot melt adhesive laminated on the porous layer, the porous layer of PTFE membrane being filled with the adhesive. In particular, in **Reaney**, the porous layer has pores that are filled with cured or partially cured thermosetting adhesive to which a layer of thermoplastic hot melt adhesive is bonded. (**Reaney**, col.3, lines 3-11). Fig. 2 of **Reaney** shows that fabric material (20) is laminated directly to the porous layer (12) coated with a thermoplastic hot melt adhesive (14). In other words, in the invention of **Reaney**, wherein the thermosetting adhesive saturated porous layer provides a suitable

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bonding surface to the thermoplastic hot melt adhesive, the fabric material is *necessarily* laminated on the porous layer, not the dense skin layer which does not contain any adhesive.

Contrary to the invention of **Reaney** wherein fabric must be laminated directly on the porous PTFE layer due to necessary contact with the thermoplastic hot melt adhesive contained in the porous PTFE layer, in the claimed invention, fabric is laminated directly on the outer surface of the *dense skin layer*, not the porous skin layer, in order to achieve air permeability through the porous PTFE layer. Additionally, the claims specifically limit the present invention to a porous layer which *does not have an adhesive layer* since an adhesive layer would compromise air permeability. The very design of the claimed invention - air permeability - precludes the claimed invention from comprising an adhesive layer on the porous layer.

In addition, the porous layer of the seam tape described in **Reaney** does not remain after curing the adhesive agent since the porous layer is then filled with the thermosetting agent. However, in the claimed invention, the porous layer is essential to achieving air permeability. In other words, the very disclosure of **Reaney**, namely a porous layer filled with cured or partially cured thermosetting adhesive, teaches away from air permeability, the very limitations of the claimed invention. Accordingly, claims 4, 5, and 7-9 define an air permeable and waterproof fabric that necessarily precludes the teachings of **Reaney**, i.e., "the outer surface of the porous layer does not have an adhesive layer...fabric is laminated on the outer surface of the dense skin layer."

Reaney and **Bellairs**, in combination, fail to teach the claimed invention because the references do not disclose laminating fabric directly on the dense skin layer, and a porous layer which does not have an adhesive layer.

It is respectfully requested that this rejection be reconsidered and withdrawn.

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Claims 4, 5, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reaney in view of any one of newly cited Pelland, newly cited Springs (U.S. Patent 5,382,223), Bellairs (U.S. Patent 4,863,788), or Henn (U.S. Patent No. 5,026,591).

The Office Action asserts that **Reaney** does not mention a specific location of the seam tape fabric layer. Contrary to this assertion, by design, in the invention of **Reaney**, fabric is laminated directly on the porous layer because the layer of thermoplastic hot melt adhesive is bonded to the porous layer. (**Reaney**, col.3, lines 3-11; Fig. 2).

Pelland and **Spring** are cited for the disclosure of applying fabric backing to a seam tape.

Bellairs and **Henn** are cited for the disclosure of using woven or nonwoven fabrics of polyester, nylon, or cotton.

Reaney, Pelland, Springs, Bellairs, and Henn, in combination, fail to teach the present invention recited in claims 4, 5, and 7-9 because **Reaney**, by design, teaches away from laminating fabric directly on the dense skin layer. Furthermore, the combined disclosure of the references fail to teach a porous layer which does not have an adhesive layer.

It is respectfully requested that this rejection be reconsidered and withdrawn.

In view of the aforementioned amendments and accompanying remarks, claims 4, 5, and 7-9, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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